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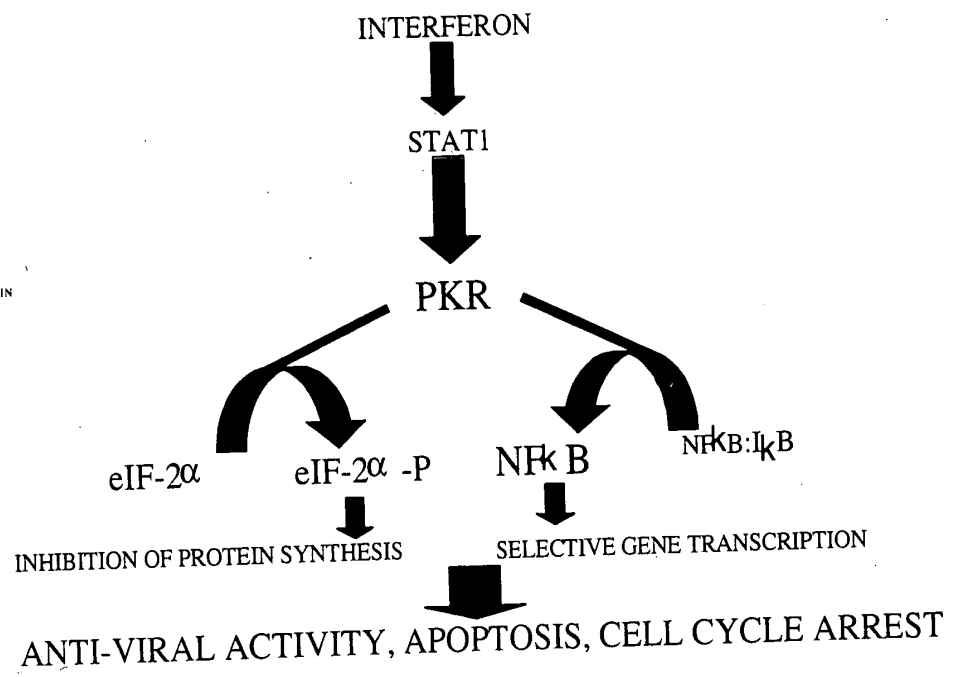


FIGURE 1

008100-11115500

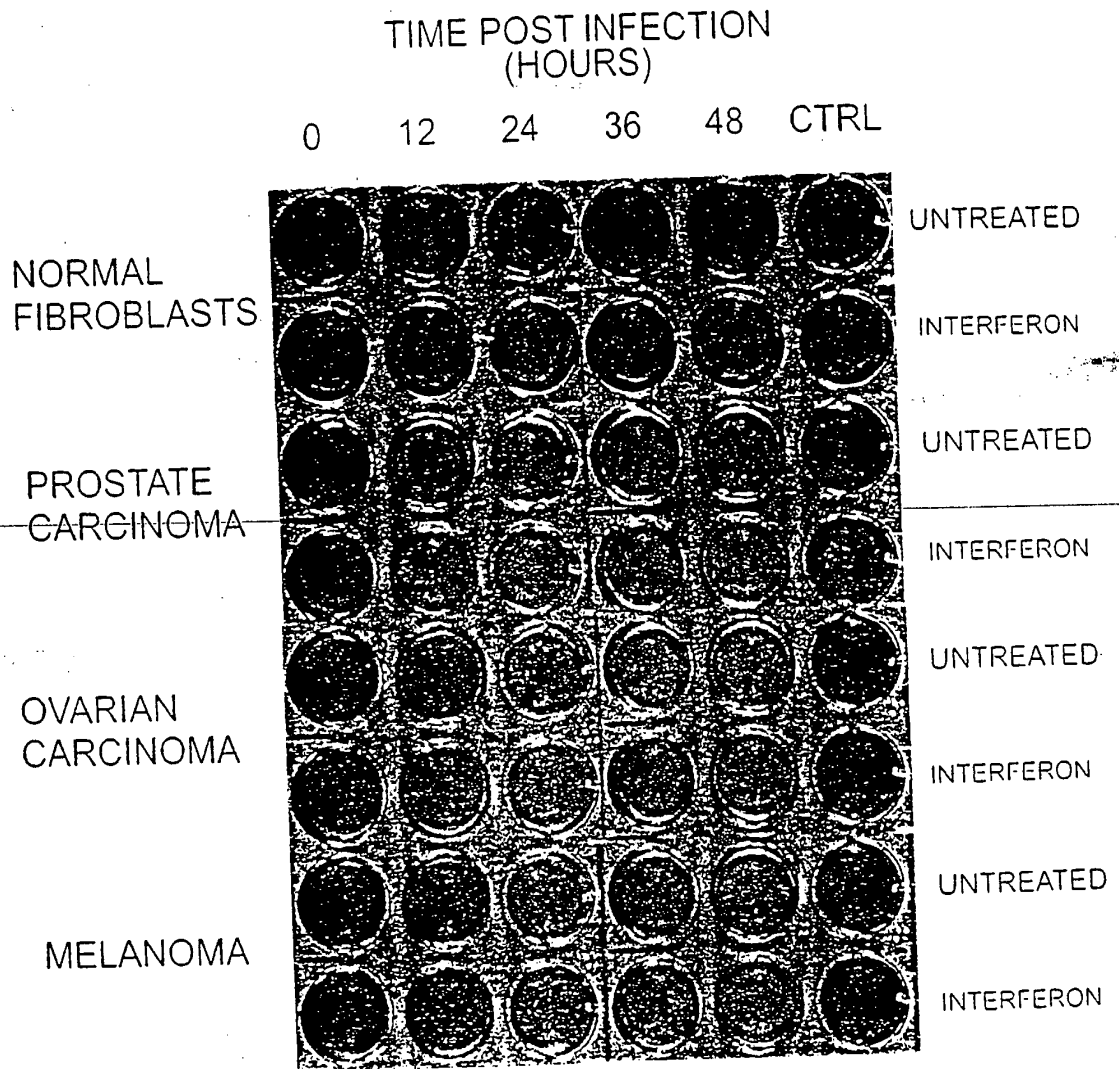
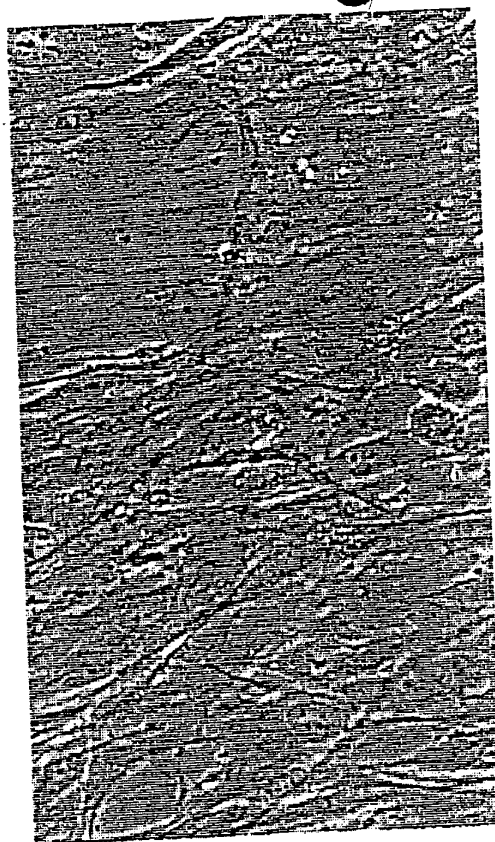


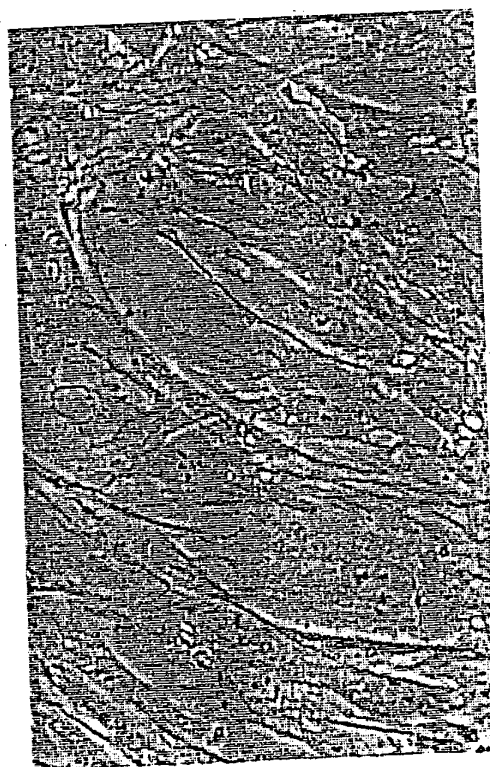
FIGURE 2

008760-44445500

VSV INFECTION OF NORMAL HUMAN FIBROBLASTS



VSV MOI 1 PFU/18
HOURS

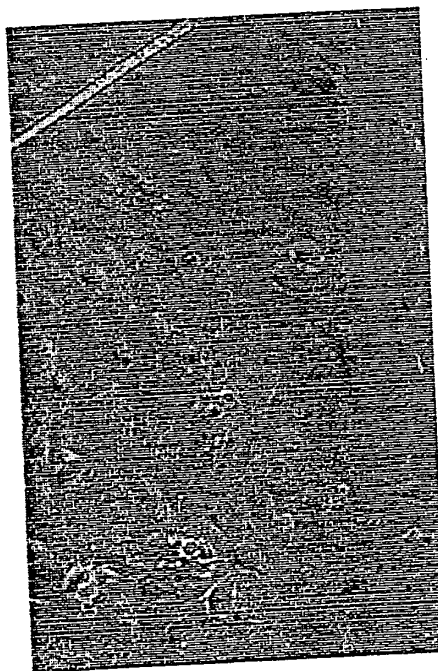
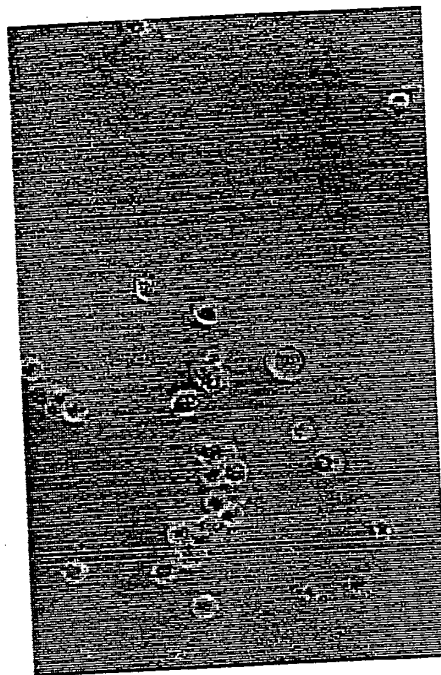


MOCK INFECTED

FIGURE 3A

005100-11111550

VSV INFECTION OF OVCAR433



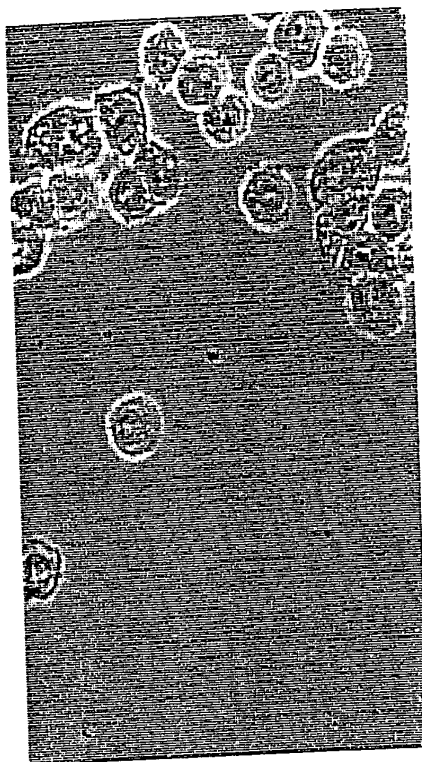
VSV 0.1PFU/18 HRS

MOCK INFECTED

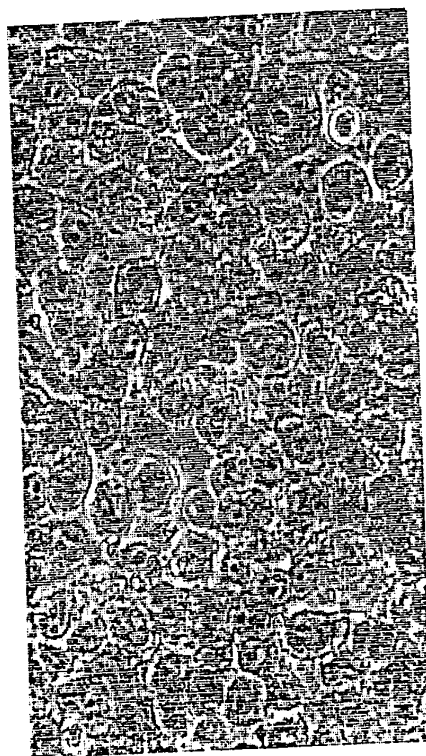
FIGURE 3B

005100-1111350

VSV INFECTION OF KB CELLS



VSV moi 1 PFU/18HRS



MOCK INFECTED

FIGURE 3C

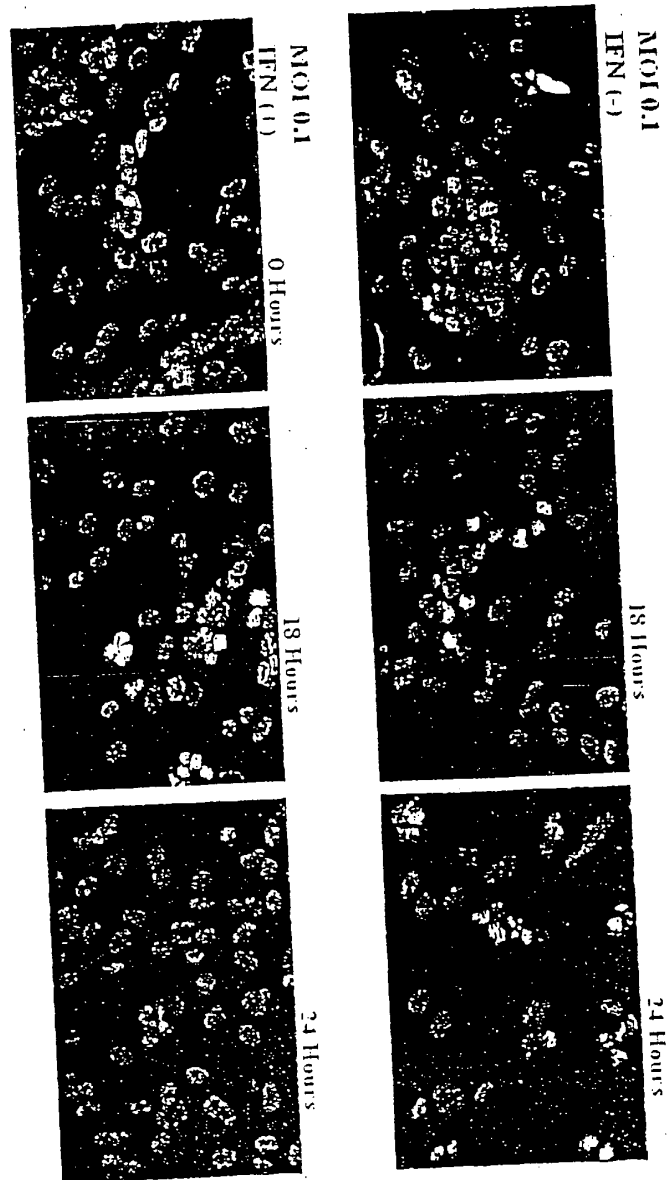


FIGURE 4

005444-091800

006160-11115560

Nude Mouse Tumours

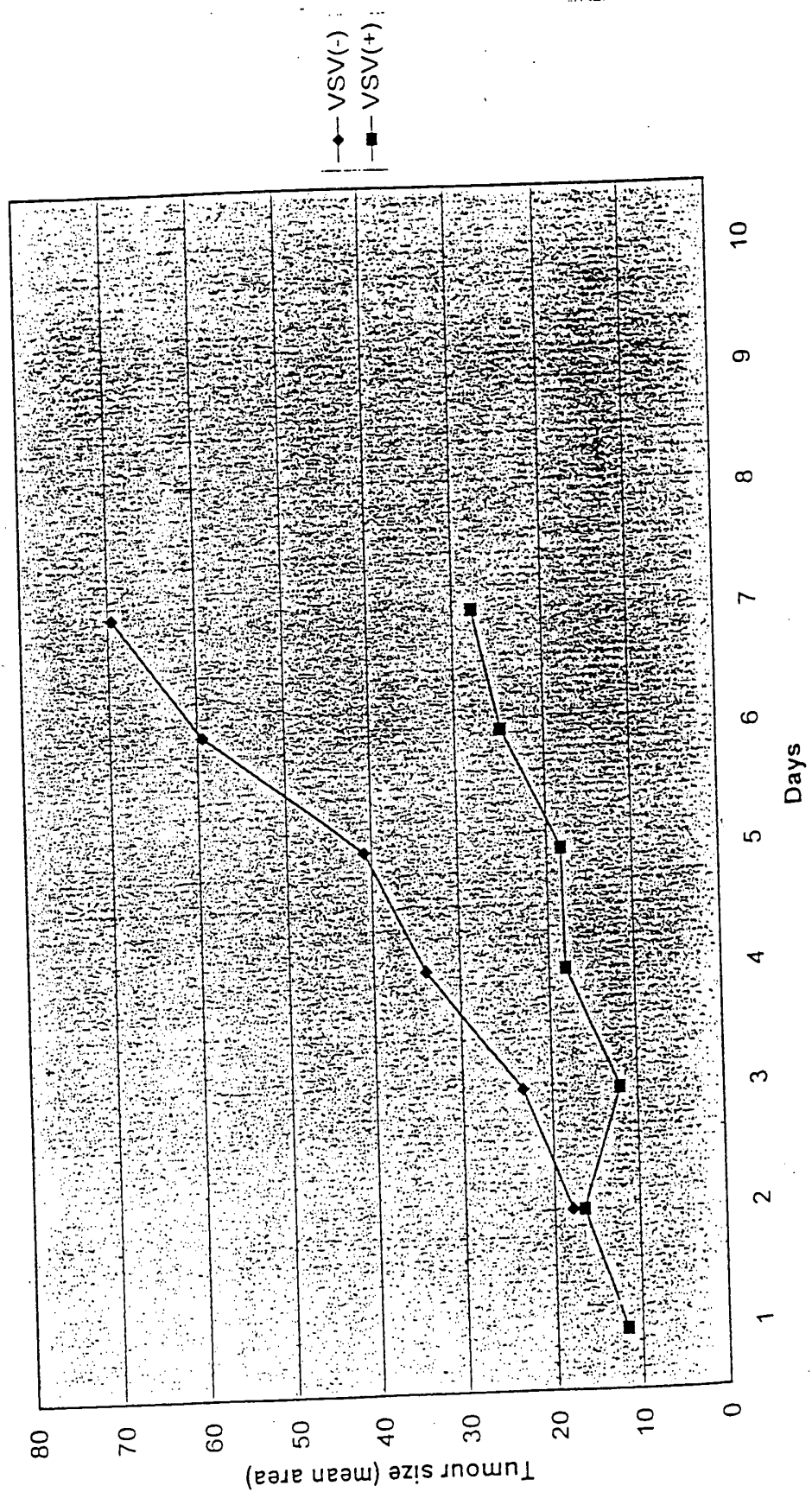


FIGURE 15

[REDACTED]



[REDACTED]

00000-11115500

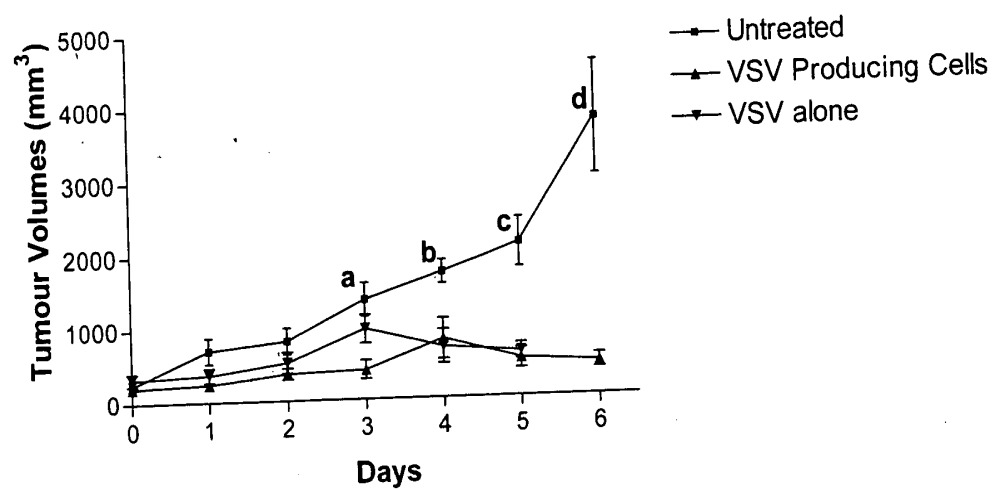
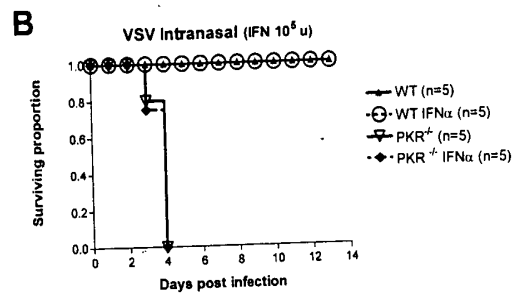
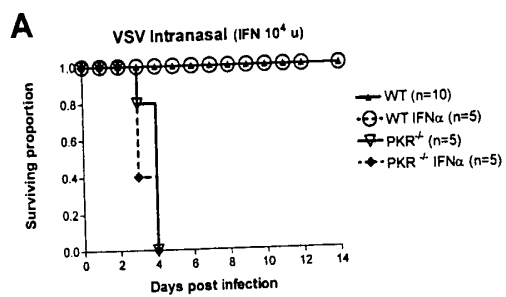


FIGURE 7



FIGURES 8A AND 8B

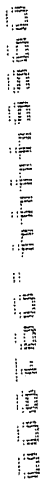


FIGURE 9

000000000000000000

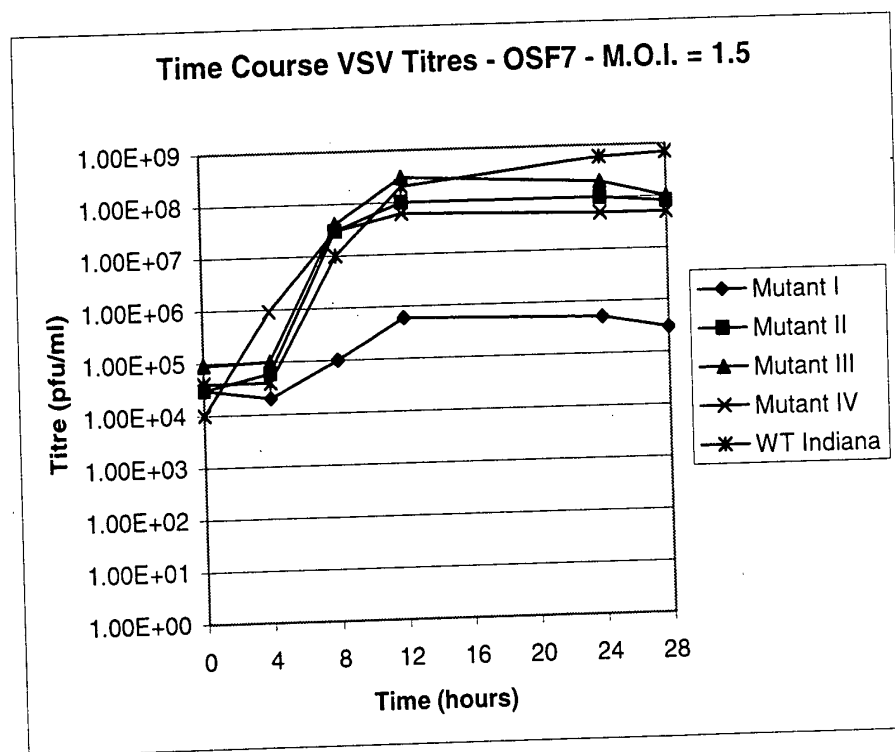


FIGURE 10B

00000-00000000

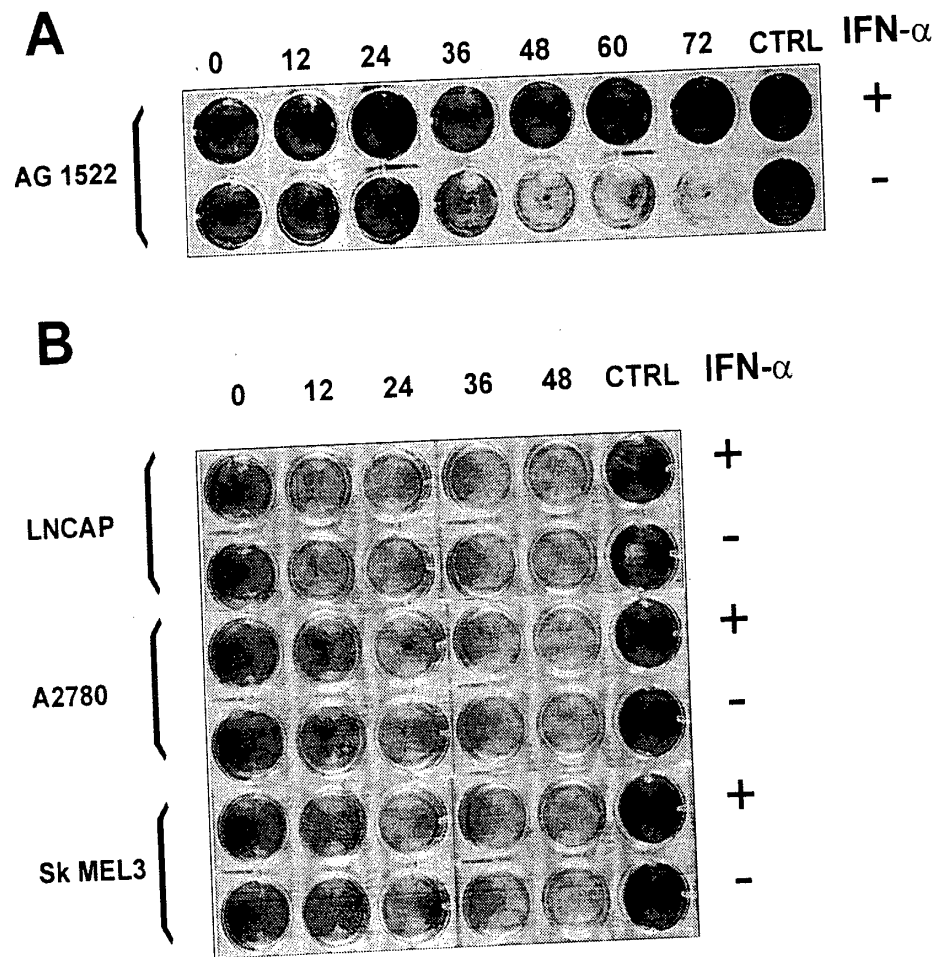


FIGURE 11

00000-00000000

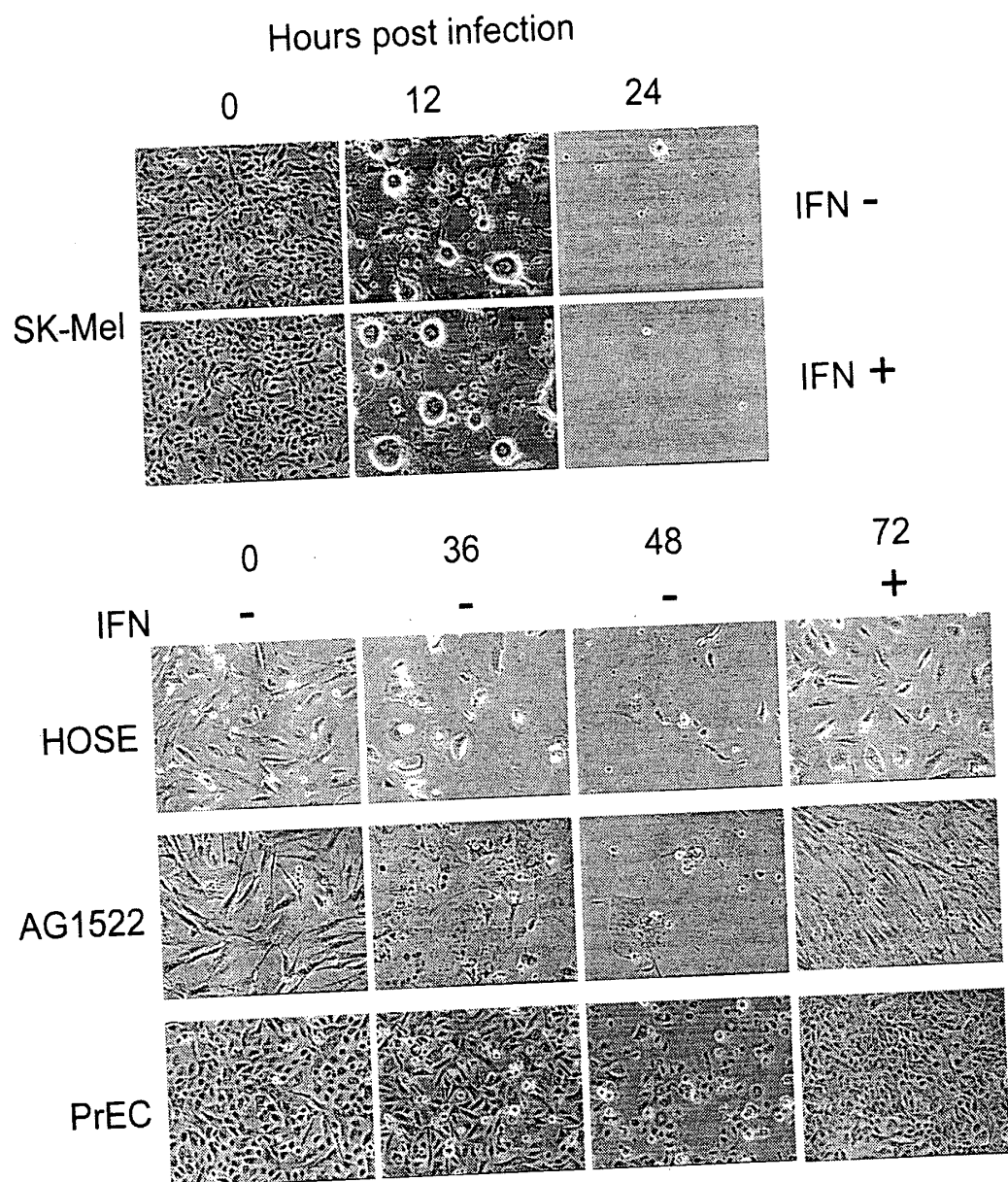


FIGURE 12

00000-11113300

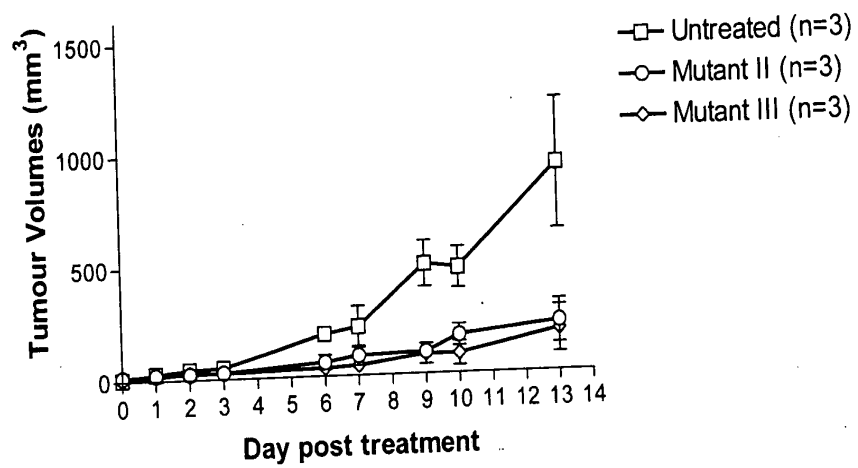


FIGURE 13

481 540
 GenBank N nucl. ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC
 HR N nucl. ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC
 M2 N nucl. ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC
 M3 N nucl. ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC
 M4 N nucl. ACAAATCAATGCAAAATGATCAATGAACAGTTTGAACCTCTTGTGCCAGAAGGTCGTGAC

541 600
 GenBank N nucl. ATTTTGTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG
 HR N nucl. ATTTTGTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG
 M2 N nucl. ATTTTGTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG
 M3 N nucl. ATTTTGTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG
 M4 N nucl. ATTTTGTGATGTGTGGGGAAATGACAGTAATTACACAAAAATTGTCGCTGCAGTGGACATG

601 660
 GenBank N nucl. TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACCTATTGTTTCC
 HR N nucl. TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACCTATTGTTTCC
 M2 N nucl. TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACCTATTGTTTCC
 M3 N nucl. TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACCTATTGTTTCC
 M4 N nucl. TTCTTCCACATGTTCAAAAAACATGAATGTGCCTCGTTCAGATACGGAACCTATTGTTTCC

661 720
 GenBank N nucl. AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG
 HR N nucl. AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG
 M2 N nucl. AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG
 M3 N nucl. AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG
 M4 N nucl. AGATTCAAAGATTGTGCTGCATTGGCAACATTTGGACACCTCTGCAAAATAACCGGAATG

721 780
 GenBank N nucl. TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAGATGGTCCAA
 HR N nucl. TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAGATGGTCCAA
 M2 N nucl. TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAGATGGTCCAA
 M3 N nucl. TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAGATGGTCCAA
 M4 N nucl. TCTACAGAAGATGTAACGACCTGGATCTTGAACCGAGAAGTTGCAGATGAGATGGTCCAA

781 840
 GenBank N nucl. ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTTCATACATGCCTTATTTGATCGAC
 HR N nucl. ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTTCATACATGCCTTATTTGATCGAC
 M2 N nucl. ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTTCATACATGCCTTATTTGATCGAC
 M3 N nucl. ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTTCATACATGCCTTATTTGATCGAC
 M4 N nucl. ATGATGCTTCCAGGCCAAGAAATTGACAAGGCCGATTTCATACATGCCTTATTTGATCGAC

841 900
 GenBank N nucl. TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCTGCCTTCCACTTCTGG
 HR N nucl. TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCTGCCTTCCACTTCTGG
 M2 N nucl. TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCTGCCTTCCACTTCTGG
 M3 N nucl. TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCTGCCTTCCACTTCTGG
 M4 N nucl. TTTGGATTGTCTTCTAAGTCTCCATATTCTTCCGTCAAAAACCTGCCTTCCACTTCTGG

FIGURE 14-2

GenBank P nucl. HR P nucl. M2 P nucl. M3 P nucl. M4 P nucl.

1 60
GenBank P nucl.: ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTGATCAGGCG
HR P nucl.: ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTAGATCAGGCG
M2 P nucl.: ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTAGATCAGGCG
M3 P nucl.: ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTAGATCAGGCG
M4 P nucl.: ATGGATAATCTCACAAAAGTTCGTGAGTATCTCAAGTCCTATTCTCGTCTAGATCAGGCG

61 120
GenBank P nucl.: GTAGGAGAGATAGATGAGATCGAAGCACAAACGAGCTGAAAAGTCCAATTATGAGTTGTTC
HR P nucl.: GTAGGAGAGATAGATGAGATCGAAGCACAAACGAGCTGAAAAGTCCAATTATGAGTTGTTC
M2 P nucl.: GTAGGAGAGATAGATGAGATCGAAGCACAAACGAGCTGAAAAGTCCAATTATGAGTTGTTC
M3 P nucl.: GTAGGAGAGATAGATGAGATCGAAGCACAAACGAGCTGAAAAGTCCAATTATGAGTTGTTC
M4 P nucl.: GTAGGAGAGATAGATGAGATCGAAGCACAAACGAGCTGAAAAGTCCAATTATGAGTTGTTC

121 180
GenBank P nucl.: CAAGAGGAGGAGTGAAGAGCATACTAGCCCTCTTATTTTCAGGCAGCAGATGATTCT
HR P nucl.: CAAGAGGAGGAGTGAAGAGCATACTAGGCCCTCTTATTTTCAGGCAGCAGATGATTCT
M2 P nucl.: CAAGAGGAGGAGTGAAGAGCATACTAGGCCCTCTTATTTTCAGGCAGCAGATGATTCT
M3 P nucl.: CAAGAGGAGGAGTGAAGAGCATACTAGGCCCTCTTATTTTCAGGCAGCAGATGATTCT
M4 P nucl.: CAAGAGGAGGAGTGAAGAGCATACTAGGCCCTCTTATTTTCAGGCAGCAGATGATTCT

181 240
GenBank P nucl.: GACACAGAATCTGAACCAGAAATGAAGACAATCAAGGTTTGTATGCACAGATCCAGAA
HR P nucl.: GACACAGAATCTGAACCAGAAATGAAGACAATCAAGGCTTGTATGTACCAGATCCGGAA
M2 P nucl.: GACACAGAATCTGAACCAGAAATGAAGACAATCAAGGCTTGTATGTACCAGATCCGGAA
M3 P nucl.: GACACAGAATCTGAACCAGAAATGAAGACAATCAAGGCTTGTATGTACCAGATCCGGAA
M4 P nucl.: GACACAGAATCTGAACCAGAAATGAAGACAATCAAGGCTTGTATGTACCAGATCCGGAA

241 300
GenBank P nucl.: GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCCTTTAGATGACTATGCGATGAGGAAGTG
HR P nucl.: GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCCTTTAGATGACTATGCGGATGAGGACGTG
M2 P nucl.: GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCCTTTAGATGACTATGCGGATGAGGACGTG
M3 P nucl.: GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCCTTTAGATGACTATGCGGATGAGGACGTG
M4 P nucl.: GCTGAGCAAGTTGAAGGCTTTATACAGGGGCCCTTTAGATGACTATGCGGATGAGGACGTG

301 360
GenBank P nucl.: GATGTTGTATTCACTTCGACTGGAACACCTGAGCTTGAATCGACGAGCATGGAAG
HR P nucl.: GATGTTGTATTCACTTCGACTGGAACAGCCTGAGCTTGAATCCGACGAGCATGGAAG
M2 P nucl.: GATGTTGTATTCACTTCGACTGGAACAGCCTGAGCTTGAATCCGACGAGCATGGAAG
M3 P nucl.: GATGTTGTATTCACTTCGACTGGAACAGCCTGAGCTTGAATCCGACGAGCATGGAAG
M4 P nucl.: GATGTTGTATTCACTTCGACTGGAACAGCCTGAGCTTGAATCCGACGAGCATGGAAG

361 420
GenBank P nucl.: ACCTTACGGTTGACATGCCAGAGGGTTAAGTGGAGAGCAGAAATCCAGTGGCTTTG
HR P nucl.: ACCTTACGGTTGACATTGCCAGAGGGTTAAGTGGAGAGCAGAAATCCAGTGGCTTTG
M2 P nucl.: ACCTTACGGTTGACATTGCCAGAGGGTTAAGTGGAGAGCAGAAATCCAGTGGCTTTG
M3 P nucl.: ACCTTACGGTTGACATTGCCAGAGGGTTAAGTGGAGAGCAGAAATCCAGTGGCTTTG
M4 P nucl.: ACCTTACGGTTGACATTGCCAGAGGGTTAAGTGGAGAGCAGAAATCCAGTGGCTTTG

FIGURE 16-1

10

GenBank M nucl. ATGAGTTCCTTAAAGAAGATTCTCGGTCTGAAGGGGAAAGGTAAGAAATCTAAGAAATTA
HR M nucl. ATGAGTTCCTTAAAGAAGATTCTCGGTCTGAAGGGGAAAGGTAAGAAATCTAAGAAATTA
M3 M nucl. ATGAGTTCCTTAAAGAAGATTCTCGGTCTGAAGGGGAAAGGTAAGAAATCTAAGAAATTA
M4 M nucl. ATGAGTTCCTTAAAGAAGATTCTCGGTCTGAAGGGGAAAGGTAAGAAATCTAAGAAATTA

61 120

GenBank M nucl. GGGATCGCACCACCCCTTATGAAGAGGACACTA⁶CGATGGAGTATGCTCCGAGCGCTCCA
HR M nucl. GGGATCGCACCACCCCTTATGAAGAGGACACTA⁶ACATGGAGTATGCTCCGAGCGCTCCA
M3 M nucl. GGGATCGCACCACCCCTTATGAAGAGGACACTA⁶ACATGGAGTATGCTCCGAGCGCTCCA
M4 M nucl. GGGATCGCACCACCCCTTATGAAGAGGACACTA⁶ACATGGAGTATGCTCCGAGCGCTCCA

121 180

GenBank M nucl. ATTGACAAATCCTATTTTGGAGTTGACGAGATGGACAC⁶CTATGATCCG¹AATCAATTAAGA
HR M nucl. ATTGACAAATCCTATTTTGGAGTTGACGAGATGGACACTCATGATCCGCATCAATTAAGA
M3 M nucl. ATTGACAAATCCTATTTTGGAGTTGACGAGAG⁶GGACACTCATGATCCGCATCAATTAAGA
M4 M nucl. ATTGACAAATCCTATTTTGGAGTTGACGAGATGGACACTCATGATCCGCATCAATTAAGA

181 240

GenBank M nucl. TATGAGAAATCTTCTTTTACAGTGAAAATGACGGTTAGATCTAATCGTCCGTTTCAAGA
HR M nucl. TATGAGAAATCTTCTTTTACAGTGAAAATGACGGTTAGATCTAATCGTCCGTTTCAAGA
M3 M nucl. TATGAGAAATCTTCTTTTACAGTGAAAATGACGGTTAGATCTAATCGTCCGTTTCAAGA
M4 M nucl. TATGAGAAATCTTCTTTTACAGTGAAAATGACGGTTAGATCTAATCGTCCGTTTCAAGA

241 300

GenBank M nucl. TACTCAGATGTGGCAGCCGCTGTATCCCATTTGGGATCACATGTACATCGGAATGGCAGGG
HR M nucl. TACTCAGATGTGGCAGCCGCTGTATCCCATTTGGGATCACATGTACATCGGAATGGCAGGG
M3 M nucl. TACTCAGATGTGGCAGCCGCTGTATCCCATTTGGGATCACATGTACATCGGAATGGCAGGG
M4 M nucl. TACTCAGATGTGGCAGCCGCTGTATCCCATTTGGGATCACATGTACATCGGAATGGCAGGG

301 360

GenBank M nucl. AAACGTCCTTCTACAA¹AATCTTGGCTTTTTTGGGTTCTTCTAATCTAAAGGCCACTCCA
HR M nucl. AAACGTCCTTCTACAA¹AGATCTTGGCTTTTTTGGGTTCTTCTAATCTAAAGGCCACTCCA
M3 M nucl. AAACGTCCTTCTACAA¹AGATCTTGGCTTTTTTGGGTTCTTCTAATCTAAAGGCCACTCCA
M4 M nucl. AAACGTCCTTCTACAA¹AGATCTTGGCTTTTTTGGGTTCTTCTAATCTAAAGGCCACTCCA

361 420

GenBank M nucl. GCGGTATTGGCAGATCAAGGTCAACCAGAGTATCAC¹ACTACTG⁶GAAGGCAGGGCTTAT
HR M nucl. GCGGTATTGGCAGATCAAGGTCAACCAGAGTATCAC¹AGCTCACTGTGAAGGCAGGGCTTAT
M3 M nucl. GCGGTATTGGCAGATCAAGGTCAACCAGAGTATCAC¹AGCTCACTGTGAAGGCAGGGCTTAT
M4 M nucl. GCGGTATTGGCAGATCAAGGTCAACCAGAGTATCAC¹AGCTCACTGTGAAGGCAGGGCTTAT

421 480

GenBank M nucl. TTGCCACA¹AG⁶ATGGGGAAGACCCCTCCCATGTCTCAATGTACCAGAGCACTTCAGAAGA
HR M nucl. TTGCCACACAGAATGGGGAAGACCCCTCCCATGTCTCAATGTACCAGAGCACTTCAGAAGA
M3 M nucl. TTGCCACACAGAATGGGGAAGACCCCTCCCATGTCTCAATGTACCAGAGCACTTCAGAAGA
M4 M nucl. TTGCCACACAGAATGGGGAAGACCCCTCCCATGTCTCAATGTACCAGAGCACTTCAGAAGA

481 540

GenBank M nucl. CCATTCAATATAGGTCTTTTACAAGGGAACG²ATTGAGCTCACAAATGACCATCTACGATGAT
HR M nucl. CCATTCAATATAGGTCTTTTACAAGGGAACG²TTGAGCTCACAAATGACCATCTACGATGAT
M3 M nucl. CCATTCAATATAGGTCTTTTACAAGGGAACG²TTGAGCTCACAAATGACCATCTACGATGAT
M4 M nucl. CCATTCAATATAGGTCTTTTACAAGGGAACG²TTGAGCTCACAAATGACCATCTACGATGAT

FIGURE 18-1

		541		600
GenBank	M	nucl.	GAGTCACTGGAAGCAGCTCCTATGATCTGGGATCATTTC AATTCTTCCAAATTTTCTGAT	
	HR	M	nucl.	GAGTCACTGGAAGCAGCTCCTATGATCTGGGATCATTTC AATTCTTCCAAATTTTCTGAT
	M3	M	nucl.	GAGTCACTGGAAGCAGCTCCTATGATCTGGGATCATTTC AATTCTTCCAAATTTTCTGAT
	M4	M	nucl.	GAGTCACTGGAAGCAGCTCCTATGATCTGGGATCATTTC AATTCTTCCAAATTTTCTGAT
		601		660
GenBank	M	nucl.	TTCAGAGAGAAGGCCTTAATGTTTGGCCTGATTGTCGAGAAAAAGGCATCTGGAGCCTGG	
	HR	M	nucl.	TTCAGAGAGAAGGCCTTAATGTTTGGCCTGATTGTCGAGAAAAAGGCATCTGGAGCCTGG
	M3	M	nucl.	TTCAGAGAGAAGGCCTTAATGTTTGGCCTGATTGTCGAGAAAAAGGCATCTGGAGCCTGG
	M4	M	nucl.	TTCAGAGAGAAGGCCTTAATGTTTGGCCTGATTGTCGAGAAAAAGGCATCTGGAGCCTGG
		661	690	
GenBank	M	nucl.	GTCCTGGATTCTATCAGCCACTTCAAATGA	
	HR	M	nucl.	GTCCTGGATTCTGTCAGCCACTTCAAATGA
	M3	M	nucl.	GTCCTGGATTCTGTCAGCCACTTCAAATGA
	M4	M	nucl.	GTCCTGGATTCTGTCAGCCACTTCAAATGA

FIGURE 18-2

項目	単位	数値
総人口	人	1,234,567
男性人口	人	612,345
女性人口	人	622,222
総世帯数	世帯	234,567
男性世帯数	世帯	112,345
女性世帯数	世帯	122,222
総労働人口	人	567,890
男性労働人口	人	289,012
女性労働人口	人	278,878
総所得	円	123,456,789
男性所得	円	61,234,567
女性所得	円	62,222,222
総消費	円	98,765,432
男性消費	円	49,876,543
女性消費	円	48,888,889
総貯蓄	円	24,691,357
男性貯蓄	円	12,345,678
女性貯蓄	円	12,345,679
総投資	円	15,678,901
男性投資	円	7,890,123
女性投資	円	7,788,778
総輸出	円	34,567,890
男性輸出	円	17,234,567
女性輸出	円	17,333,323
総輸入	円	23,456,789
男性輸入	円	11,723,456
女性輸入	円	11,733,333
総貿易	円	11,111,101
男性貿易	円	5,555,555
女性貿易	円	5,555,546

GenBank G nucl. 481 540
 HR G nucl. GATTACAGTTCATCAACGGAAAATGCAGCAATACATATGCCCCACTGTCCATAACTCC
 M2 G nucl.
 M3 G nucl. GATTACAGTTCATCAACGGAAAATGCAGCAATGACATATGCCCCACTGTCCATAACTCC
 M4 G nucl. GATTACAGTTCATCAACGGAAAATGCAGCAATGACATATGCCCCACTGTCCATAACTCC

GenBank G nucl. 541 600
 HR G nucl. ACAACCTGGCATTCGACTATAAGGTCAAAGGGCTATGTGATTCTAACCTCATTTCCATG
 M2 G nucl.
 M3 G nucl. ACAACCTGGCATTCGACTATAAGGTCAAAGGGCTATGTGATTCTAACCTCATTTCCATG
 M4 G nucl. ACAACCTGGCATTCGACTATAAGGTCAAAGGGCTATGTGATTCTAACCTCATTTCCATG

GenBank G nucl. 601 660
 HR G nucl. GACATCACCTTCTTCTCAGAGGACGGAGAGCTATCATCCCTGGAAAGGAGGGGCACAGGG
 M2 G nucl.
 M3 G nucl. GACATCACCTTCTTCTCAGAGGACGGAGAGCTATCATCCCTAGGAAAGGAGGGGCACAGGG
 M4 G nucl. GACATCACCTTCTTCTCAGAGGACGGAGAGCTATCATCCCTAGGAAAGGAGGGGCACAGGG

GenBank G nucl. 661 720
 HR G nucl. TTCAGAAGTAACTACTTTGCTTATGAACTGGAGCAAGGCCTGCAAAATGCAATACTGC
 M2 G nucl.
 M3 G nucl. TTCAGAAGTAACTACTTTGCTTATGAACTGGAGACAAGGCCTGCAAAATGCAAGTACTGC
 M4 G nucl. TTCAGAAGTAACTACTTTGCTTATGAACTGGAGACAAGGCCTGCAAAATGCAAGTACTGC

GenBank G nucl. 721 780
 HR G nucl. AAGCATTGGGGAGTCAGACTCCCATCAGGTGTCTGGTTCGAGATGGCTGATAAGGATCTC
 M2 G nucl.
 M3 G nucl. AAGCATTGGGGAGTCAGACTCCCATCAGGTGTCTGGTTCGAGATGGCTGATAAGGATCTC
 M4 G nucl. AAGCGTTGGGGAGTCAGACTCCCATCAGGTGTCTGGTTCGATGGCTGATAAGGATCTC

GenBank G nucl. 781 840
 HR G nucl. TTTGCTGCAGCCAGATTCCCTGAATGCCCAGAAGGGTCAAGTATCTCTGCTCCATCTCAG
 M2 G nucl.CCATCTCAG
 M3 G nucl. TTTGCTGCAGCCAGATTCCCTGAATGCCCAGAAGGGTCAAGTATCTCTGCTCCATCTCAG
 M4 G nucl. TTTGCTGCAGCCAGATTCCCTGAATGCCCAGAAGGGTCAAGTATCTCTGCTCCATCTCAG

GenBank G nucl. 841 900
 HR G nucl. ACCTCAGTGGATGTAAGTCTATTTCAGGACGTTGAGAGGATCTTGATTATTCCTCTGC
 M2 G nucl. ACCTCAGTGGATGTAAGTCTATTTCAGGACGTTGAGAGGATCTTGATTATTCCTCTGC
 M3 G nucl. ACCTCAGTGGATGTAAGTCTATTTCAGGACGTTGAGAGGATCTTGATTATTCCTCTGC
 M4 G nucl. ACCTCAGTGGATGTAAGTCTATTTCAGGACGTTGAGAGGATCTTGATTATTCCTCTGC

FIGURE 20-2

006760-11115500

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1321                                     1380
GenBank G nucl. TTTGGTGATACTGGGCTATCCAAAAATCCAATCGAGTTGTAGAAAGGTTGGTTCAGTAGT
HR G nucl. ....
M2 G nucl. TTTGGTGATACTGGGCTATCCAAAAATCCAATCGAGTTGTAGAAAGGTTGGTTCAGTAGT
M3 G nucl. TTTGGTGATACTGGGCTATCCAAAAATCCAATCGAGTTGTAGAAAGGTTGGTTCAGTAGT
M4 G nucl. TTTGGTGATACTGGGCTATCCAAAAATCCAATCGAGTTGTAGAAAGGTTGGTTCAGTAGT

1381                                     1440
GenBank G nucl. TGGAAAGAGCTCTATTGCCTCTTTTTTCTTTATCATAGGGTTAATCATTGGACTATTCTTG
HR G nucl. ....
M2 G nucl. TGGAAAGAGCTCTATTGCCTCTTTTTTCTTTATCATAGGGTTAATCATTGGACTATTCTTG
M3 G nucl. TGGAAAGAGCTCTATTGCCTCTTTTTTCTTTATCATAGGGTTAATCATTGGACTATTCTTG
M4 G nucl. TGGAAAGAGCTCTATTGCCTCTTTTTTCTTTATCATAGGGTTAATCATTGGACTATTCTTG

1441                                     1500
GenBank G nucl. GTTCTCCGAGTTGGTATCCATCTTTGCATTAAATTAAAGCACACCAAGAAAAGACAGATT
HR G nucl. ....
M2 G nucl. GTTCTCCGAGTTGGTATTTATCTTTGCATTAAATTAAAGCACACCAAGAAAAGACAGATT
M3 G nucl. GTTCTCCGAGTTGGTATTTATCTTTGCATTAAATTAAAGCACACCAAGAAAAGACAGATT
M4 G nucl. GTTCTCCGAGTTGGTATTTATCTTTGCATTAAATTAAAGCACACCAAGAAAAGACAGATT

1501                                     1536
GenBank G nucl. TATACAGACATAGAGATGAACCGACTTGGAAAGTAA
HR G nucl. ....
M2 G nucl. TATACAGACATAGAGATGAACCGACTTGGGAAGTAA
M3 G nucl. TATACAGACATAGAGATGAACCGACTTGGGAAGTAA
M4 G nucl. TATACAGACATAGAGATGAACCGACTTGGGAAGTAA
```

FIGURE 20-4

421 480

GenBank G a.a. FEHPHIQDAASQLPDDESLFFGDTGLSKNPIEFVEGWSSWKSSIASFFFIIGLIIGLFL

HR G a.a.

M2 G a.a. FEHPHIQDAASQLPDDETLFFGDTGLSKNPIEFVEGWSSWKSSIASFFFIIGLIIGLFL

M3 G a.a. FEHPHIQDAASQLPDDETLFFGDTGLSKNPIEFVEGWSSWKSSIASFFFIIGLIIGLFL

M4 G a.a. FEHPHIQDAASQLPDDETLFFGDTGLSKNPIEFVEGWSSWKSSIASFFFIIGLIIGLFL

481 512

GenBank G a.a. VLRVGIHLCKIKLHTKKRQIYTDIEMNRLGK

HR G a.a.

M2 G a.a. VLRVGIYLCIKLHTKKRQIYTDIEMNRLGK

M3 G a.a. VLRVGIYLCIKLHTKKRQIYTDIEMNRLGK

M4 G a.a. VLRVGIYLCIKLHTKKRQIYTDIEMNRLGK

FIGURE 21-2

003760-1111550

	541	600
GenBank L nucl.	AACTTGGCGAGGACTTTCAAAGGCAAAGTCAGAAGAAGTTCTCATGGAACGAACATATGC	
HR L nucl.	.....
M2 L nucl.	.....
M4 L nucl.	AACTTGGCGAGGACTTTCAAAGGCAAAGTCAGAAGAAGTTCTCATGGAACGAACATATGC	
	601	660
GenBank L nucl.	AGGATTAGGGTTCCCAGCTTGGGTCCTACTTTTATTTTCAGAAGGATGGGCTTACTTCAAG	
HR L nucl.	.....
M2 L nucl.	.....
M4 L nucl.	AGGATTAGGGTTCCCAGCTTGGGTCCTACTTTTATTTTCAGAAGGATGGGCTTACTTCAAG	
	661	720
GenBank L nucl.	AACTTGATATTCTAATGGACCGAAACTTTCTGTTAATGGTCAAAGATGTGATTATAGGG	
HR L nucl.	.....
M2 L nucl.	.....
M4 L nucl.	AACTTGATATTCTAATGGACCGAAACTTTCTGTTAATGGTCAAAGATGTGATTATAGGG	
	721	780
GenBank L nucl.	AGGATGCAAACGGTGCTATCCATGGTATGTAGAATAGACAACCTGTTCTCAGAGCAAGAC	
HR L nucl.	.....
M2 L nucl.	.....
M4 L nucl.	AGGATGCAAACGGTGCTATCCATGGTATGTAGAATAGACAACCTGTTCTCAGAGCAAGAC	
	781	840
GenBank L nucl.	ATCTTCTCCCTTCTAAATATCTACAGAATTGGAGATAAAATTGTGGAGAGGCAGGGAAAT	
HR L nucl.	.....
M2 L nucl.	.....
M4 L nucl.	ATCTTCTCCCTTCTAAATATCTACAGAATTGGAGATAAAATTGTGGAGAGGCAGGGAAAT	
	841	900
GenBank L nucl.	TTTTCTTATGACTTGATTAAATGGTGGAACCGATATGCAACTTGAGCTGATGAAATTA	
HR L nucl.	.....
M2 L nucl.	.....
M4 L nucl.	TTTTCTTATGACTTGATTAAATGGTGGAACCGATATGCAACTTGAGCTGATGAAATTA	
	901	960
GenBank L nucl.	GCAAGAGAATCAAGGCCTTTAGTCCCACAATTCCTCATTTTGAAAAATCATATCAAGACT	
HR L nucl.	.....
M2 L nucl.	.....
M4 L nucl.	GCAAGAGAATCAAGGCCTTTAGTCCCACAATTCCTCATTTTGAAAAATCATATCAAGACT	
	961	1020
GenBank L nucl.	TCTGTTGATGAAGGGGCAAAAATTGACCGAGGTATAAGATTCCCTCCATGATCAGATAATG	
HR L nucl.	.....
M2 L nucl.	.....
M4 L nucl.	TCTGTTGATGAAGGGGCAAAAATTGACCGAGGTATAAGATTCCCTCCATGATCAGATAATG	

FIGURE 22-2

GenBank L nucl.	1021	1080
HR L nucl.	AGTGTGAAAACAGTGGATCTCACACTGGTGATTTATGGATCGTTCAGACATTGGGGTCAT	
M2 L nucl.	.....CATTGGGGTCAT	
M4 L nucl.	AGTGTGAAAACAGTGGATCTCACACTGGTGATTTATGGATCGTTCAGACATTGGGGTCAT	
GenBank L nucl.	1081	1140
HR L nucl.	CCTTTTATAGATTATTACCTGGACTAGAAAAATTACATTCCCAAGTAACCATGAAGAAA	
M2 L nucl.	CCTTTTATAGATTATTACGCTGGCTAGAAAAATTACATTCCCAAGTWACCATGAAGAAA	
M4 L nucl.	CCTTTTATAGATTATTACGCTGGACTAGAAAAATTACATTCCCAAGTAACCATGAAGAAA	
GenBank L nucl.	1141	1200
HR L nucl.	GATATTGATGTGTCATATGCAAAAGCACTTGCAAGTGATTTAGCTCGGATTGTTCTATTT	
M2 L nucl.	GATATTGATGTGTCATATGCAAAAGCACTTGCAAGTGATTTAGCTCGGATTGTTCTATTT	
M4 L nucl.	GATATTGATGTGTCATATGCAAAAGCACTTGCAAGTGATTTAGCTCGGATTGTTCTATTT	
GenBank L nucl.	1201	1260
HR L nucl.	CAACAGTTCAATGATCATAAAAAGTGGTTCGTGAATGGAGACTTGCTCCCTCATGATCAT	
M2 L nucl.	CAACAGTTCAATGATCATAAAAAGTGGTTCGTGAATGGAGACTTGCTCCCTCATGATCAT	
M4 L nucl.	CAACAGTTCAATGATCATAAAAAGTGGTTCGTGAATGGAGACTTGCTCCCTCATGATCAT	
GenBank L nucl.	1261	1320
HR L nucl.	CCCTTTAAAAGTCATGTTAAAGAAAATACATGGCCACAGCTGCTCAAGTTCAAGATTTT	
M2 L nucl.	CCCTTTAAAAGTCATGTTAAAGAAAATACATGGCCACAGCTGCTCAAGTTCAAGATTTT	
M4 L nucl.	CCCTTTAAAAGTCATGTTAAAGAAAATACATGGCCACAGCTGCTCAAGTTCAAGATTTT	
GenBank L nucl.	1321	1380
HR L nucl.	GGAGATAAATGGCATGAACTTCCGCTGATTAAATGTTTTGAAATACCCGACTTACTAGAC	
M2 L nucl.	GGAGATAAATGGCATGAACTTCCGCTGATTAAATGTTTTGAAATACCCGACTTACTAGAC	
M4 L nucl.	GGAGATAAATGGCATGAACTTCCGCTGATTAAATGTTTTGAAATACCCGACTTACTAGAC	
GenBank L nucl.	1381	1440
HR L nucl.	CCATCGATAATATACTCTGACAAAAGTCATTCAATGAATAGGTCAGAGGTGTTGAAACAT	
M2 L nucl.	CCATCGATAATATACTCTGACAAAAGTCATTCAATGAATAGGTCAGAGGTGTTGAAACAT	
M4 L nucl.	CCATCGATAATATACTCTGACAAAAGTCATTCAATGAATAGGTCAGAGGTGTTGAAACAT	
GenBank L nucl.	1441	1500
HR L nucl.	GTCCGAATGAATCCGAACACTCCTATCCCTAGTAAAAAGGTGTTGCAGACTATGTTGGAC	
M2 L nucl.	GTCCGAATGAATCCGAACACTCCTATCCCTAGTAAAAAGGTGTTGCAGACTATGTTGGAC	
M4 L nucl.	GTCCGAATGAATCCGAACACTCCTATCCCTAGTAAAAAGGTGTTGCAGACTATGTTGGAC	

FIGURE 22-3

	1501	1560
GenBank L nucl.	ACAAAGGCTACCAATTGGAAAGAATTTCTTAAAGAGATTGATGAGAAGGGCTTAGATGAT	
HR L nucl.	ACAAAGGCTACCAATTGGAAAGAATTTCTTAAAGAGATTGATGAGAAGGGCTTAGATGAT	
M2 L nucl.	.....
M4 L nucl.	ACAAAGGCTACCAATTGGAAAGAATTTCTTAAAGAGATTGATGAGAAGGGCTTAGATGAT	
	1561	1620
GenBank L nucl.	GATGATCTAATTATTGGTCTTAAAGGAAAGGAGAGGGAAGTGAAGTTGGCAGGTAGATTT	
HR L nucl.	GATGATCTAATTATTGGTCTTAAAGGAAAGGAGAGGGAAGTGAAGTTGGCAGGTAGATTT	
M2 L nucl.	.....
M4 L nucl.	GATGATCTAATTATTGGTCTTAAAGGAAAGGAGAGGGAAGTGAAGTTGGCAGGTAGATTT	
	1621	1680
GenBank L nucl.	TTCTCCCTAATGTCTTGGAAATTGCGAGAATACTTTGTAATTACCGAATATTTGATAAAG	
HR L nucl.	TTCTCCCTAATGTCTTGGAAATTGCGAGAATACTTTGTAATTACCGAATATTTGATAAAG	
M2 L nucl.	.....
M4 L nucl.	TTCTCCCTAATGTCTTGGAAATTGCGAGAATACTTTGTAATTACCGAATATTTGATAAAG	
	1681	1740
GenBank L nucl.	ACTCATTTCGTCCCTATGTTTAAAGGCCTGACAATGGCGGACGATCTAACTGCAGTCATT	
HR L nucl.	ACTCATTTCGTCCCTATGTTTAAAGGCCTGACAATGGCGGACGATCTAACTGCAGTCATT	
M2 L nucl.	.....
M4 L nucl.	ACTCATTTCGTCCCTATGTTTAAAGGCCTGACAATGGCGGACGATCTAACTGCAGTCATT	
	1741	1800
GenBank L nucl.	AAAAAGATGTTAGATTCTCTCATCCGCCAAGGATTGAAGTCATATGAGGCAATTTGCATA	
HR L nucl.	AAAAAGATGTTAGATTCTCTCATCCGCCAAGGATTGAAGTCATATGAGGCAATTTGCATA	
M2 L nucl.	.....
M4 L nucl.	AAAAAGATGTTAGATTCTCTCATCCGCCAAGGATTGAAGTCATATGAGGCAATTTGCATA	
	1801	1860
GenBank L nucl.	GCCAATCACATTGATTACGAAAAATGGAATAACCACCAAAGGAAGTTATCAAACGGCCCA	
HR L nucl.	GCCAATCACATTGATTACGAAAAATGGAATAACCACCAAAGGAAGTTATCAAACGGCCCA	
M2 L nucl.	.....
M4 L nucl.	GCCAATCACATTGATTACGAAAAATGGAATAACCACCAAAGGAAGTTATCAAACGGCCCA	
	1861	1920
GenBank L nucl.	GTGTTCCGAGTTATGGGCCAGTTCTTAGGTTATCCATCCTTAATCGAGAGAACTCATGAA	
HR L nucl.	GTGTTCCGAGTTATGGGCCAGTTCTTAGGTTATCCATCCTTAATCGAGAGAACTCATGAA	
M2 L nucl.	.....
M4 L nucl.	GTGTTCCGAGTTATGGGCCAGTTCTTAGGTTATCCATCCTTAATCGAGAGAACTCATGAA	
	1921	1980
GenBank L nucl.	TTTTTTGAGAAAAGTCTTATATACTACAATGGAAGACCAGACTTGATGCGTGTTTACAAC	
HR L nucl.	TTTTTTGAGAAAAGTCTTATATACTACAATGGAAGACCAGACTTGATGCGTGTTTACAAC	
M2 L nucl.	.....
M4 L nucl.	TTTTTTGAGAAAAGTCTTATATACTACAATGGAAGACCAGACTTGATGCGTGTTTACAAC	
	1981	2040
GenBank L nucl.	AACACACTGATCAATTCAACCTCCCAACGAGTTTGTGGCAAGGACAAGAGGGTGGACTG	
HR L nucl.	AACACACTGATCAATTCAACCTCCCAACGAGTTTGTGGCAAGGACAAGAGGGTGGACTG	
M2 L nucl.	.....
M4 L nucl.	AACACACTGATCAATTCAACCTCCCAACGAGTTTGTGGCAAGGACAAGAGGGTGGACTG	

FIGURE 22-4

	3121	3180
GenBank L nucl.	AACTCCTTTTAAGAAAAAGTATCATAGGGAATTGGATGATTTGATTGTGAGGAGTGAGGTA	
HR L nucl.	AACTCCTTTTAAGAAAAAGTATCATAGGGAATTGGATGATTTGATTGTGAGGAGTGAGGTA	
M2 L nucl.	.....
M4 L nucl.	AACTCCTTTTAAGAAAAAGTATCATAGGGAATTGGATGATTTGATTGTGAGGAGTGAGGTA	
	3181	3240
GenBank L nucl.	TCCTCTTTTGACACATTTAGGGAACTTCATTTGAGAAGGGGATCATGTAAAATGTGGACA	
HR L nucl.	TCCTCTTTTGACACATTTAGGGAACTTCATTTGAGAAGGGGATCATGTAAAATGTGGACA	
M2 L nucl.	.....
M4 L nucl.	TCCTCTTTTGACACATTTAGGGAACTTCATTTGAGAAGGGGATCATGTAAAATGTGGACA	
	3241	3300
GenBank L nucl.	TGTTTCAGCTACTCATGCTGACACATTAAGATACAAATCCTGGGGCCGTACAGTTATTGGG	
HR L nucl.	TGTTTCAGCTACTCATGCTGACACATTAAGATACAAATCCTGGGGCCGTACAGTTATTGGG	
M2 L nucl.	.....
M4 L nucl.	TGTTTCAGCTACTCATGCTGACACATTAAGATACAAATCCTGGGGCCGTACAGTTATTGGG	
	3301	3360
GenBank L nucl.	ACAACTGTACCCCATCCATTAGAAATGTTGGGTCCACAACATCGAAAAGAGACTCCTTGT	
HR L nucl.	ACAACTGTACCCCATCCATTAGAAATGTTGGGTCCACAACATCGAAAAGAGACTCCTTGT	
M2 L nucl.	.....
M4 L nucl.	ACAACTGTACCCCATCCATTAGAAATGTTGGGTCCACAACATCGAAAAGAGACTCCTTGT	
	3361	3420
GenBank L nucl.	GCACCATGTAACACATCAGGGTTCAATTATGTTTCTGTGCATTGTCCAGACGGGATCCAT	
HR L nucl.	GCACCATGTAACACATCAGGGTTCAATTATGTTTCTGTGCATTGTCCAGACGGGATCCAT	
M2 L nucl.	.....
M4 L nucl.	GCACCATGTAACACATCAGGGTTCAATTATGTTTCTGTGCATTGTCCAGACGGGATCCAT	
	3421	3480
GenBank L nucl.	GACGTCCTTTAGTTTCACGGGGACCATTGCCTGCCTTATCTAGGGTCTAAAACATCTGAATCT	
HR L nucl.	GACGTCCTTTAGTTTCACGGGGACCATTGCCTGCCTTATCTAGGGTCTAAAACATCTGAATCT	
M2 L nucl.	.....
M4 L nucl.	GACGTCCTTTAGTTTCACGGGGACCATTGCCTGCCTTATCTAGGGTCTAAAACATCTGAATCT	
	3481	3540
GenBank L nucl.	ACATCTATTTTGCAGCCTTGGGAAAGGGAAAGCAAAGTCCCACTGATTAAAAGAGCTACA	
HR L nucl.	ACATCTATTTTGCAGCCTTGGGAAAGGGAAAGCAAAGTCCCACTGATTAAAAGAGCTACA	
M2 L nucl.	.....
M4 L nucl.	ACATCTATTTTGCAGCCTTGGGAAAGGGAAAGCAAAGTCCCACTGATTAAAAGAGCTACA	
	3541	3600
GenBank L nucl.	CGTCTTAGAGATGCTATCTCTTGGTTTGTTGAACCCGACTCTAACTAGCAATGACTATA	
HR L nucl.	CGTCTTAGAGATGCTATCTCTTGGTTTGTTGAACCCGACTCTAACTAGCAATGACTATA	
M2 L nucl.	.....
M4 L nucl.	CGTCTTAGAGATGCTATCTCTTGGTTTGTTGAACCCGACTCTAACTAGCAATGACTATA	
	3601	3660
GenBank L nucl.	CTTTCTAACATCCACTCTTTAACAGGCGAAGAATGGACCAAAGGCAGCATGGGTTCAAA	
HR L nucl.	CTTTCTAACATCCACTCTTTAACAGGCGAAGAATGGACCAAAGGCAGCATGGGTTCAAA	
M2 L nucl.	.....
M4 L nucl.	CTTTCTAACATCCACTCTTTAACAGGCGAAGAATGGACCAAAGGCAGCATGGGTTCAAA	

FIGURE 22-7

	4741	4800
GenBank L nucl.	AGACATGCTTGCAAGTTCGGGATTGCTAAGGATAATAATAAAGACATGAGCTATCCCCCT	
HR L nucl.	AGACATGCTTGCAAGTTCGGGATTGCTAAGGATAATAATAAAGACATGAGCTATCCCCCT	
M2 L nucl.	.....
M4 L nucl.	AGACATGCTTGCAAGTTCGGGATTGCTAAGGATAATAATAAAGACATGAGCTATCCCCCT	
	4801	4860
GenBank L nucl.	TGGGGAAGGGAATCCAGAGGGACAATTACAACAATCCCTGTTTATTATACGACCACCCCT	
HR L nucl.	TGGGGAAGGGAATCCAGAGGGACAATTACAACAATCCCTGTTTATTATACGACCACCCCT	
M2 L nucl.	.....
M4 L nucl.	TGGGGAAGGGAATCCAGAGGGACAATTACAACAATCCCTGTTTATTATACGACCACCCCT	
	4861	4920
GenBank L nucl.	TACCCAAAGATGCTAGAGATGCCTCCAAGAATCCAAAATCCCCTGCTGTCCGGAATCAGG	
HR L nucl.	TACCCAAAGATGCTAGAGATGCCTCCAAGAATCCAAAATCCCCTGCTGTCCGGAATCAGG	
M2 L nucl.	.....
M4 L nucl.	TACCCAAAGATGCTAGAGATGCCTCCAAGAATCCAAAATCCCCTGCTGTCCGGAATCAGG	
	4921	4980
GenBank L nucl.	TTGGGGCCAATTACCAACTGGCGCTCATTATAAAATTCGGAGTATATTACATGGAATGGGA	
HR L nucl.	TTGGGGCCAGTTACCAACTGGCGCTCATTATAAAATTCGGAGTATATTACATGGAATGGGA	
M2 L nucl.	.....
M4 L nucl.	TTGGGGCCAGTTACCAACTGGCGCTCATTATAAAATTCGGAGTATATTACATGGAATGGGA	
	4981	5040
GenBank L nucl.	ATCCATTACAGGGACTTCTTGAGTTGTGGAGACGGCTCCGGAGGGATGACTGCTGCATTA	
HR L nucl.	ATCCATTACAGGGACTTCTTGAGTTGTGGAGACGGCTCCGGAGGGATGACTGCTGCATTA	
M2 L nucl.	.....
M4 L nucl.	ATCCATTACAGGGACTTCTTGAGTTGTGGAGACGGCTCCGGAGGGATGACTGCTGCATTA	
	5041	5100
GenBank L nucl.	CTACGAGAAAATGTGCATAGCAGAGGAATATTCAATAGTCTGTTAGAATTATCAGGGTCA	
HR L nucl.	CTACGAGAAAATGTGCATAGCAGAGGAATATTCAATAGTCTGTTAGAATTATCAGGGTCA	
M2 L nucl.	.....
M4 L nucl.	CTACGAGAAAATGTGCATAGCAGAGGAATATTCAATAGTCTGTTAGAATTATCAGGGTCA	
	5101	5160
GenBank L nucl.	GTCATGCGAGGCGCCTCTCCTGAGCCCCCAGTGCCCTAGAACTTTAGGAGGAGATAAA	
HR L nucl.	GTCATGCGAGGCGCCTCTCCTGAGCCCCCAGTGCCCTAGAACTTTAGGAGGAGATAAA	
M2 L nucl.	.....
M4 L nucl.	GTCATGCGAGGCGCCTCTCCTGAGCCCCCAGTGCCCTAGAACTTTAGGAGGAGATAAA	
	5161	5220
GenBank L nucl.	TCGAGATGTGTAAATGGTGAAACATGTTGGGAATATCCATCTGACTTATGTGACCCAAGG	
HR L nucl.	TCGAGATGTGTAAATGGTGAAACATGTTGGGAATATCCATCTGACTTATGTGACCCAAGG	
M2 L nucl.	.....
M4 L nucl.	TCGAGATGTGTAAATGGTGAAACATGTTGGGAATATCCATCTGACTTATGTGACCCAAGG	
	5221	5280
GenBank L nucl.	ACTTGGGACTATTTCCCTCCGACTCAAAGCAGGCTTGGGGCTTCAAATTGATTTAATTGTA	
HR L nucl.	ACTTGGGACTATTTCCCTCCGACTCAAAGCAGGCTTGGGGCTTCAAATTGATTTAATTGTA	
M2 L nucl.	.....
M4 L nucl.	ACTTGGGACTATTTCCCTCCGACTCAAAGCAGGCTTGGGGCTTCAAATTGATTTAATTGTA	

FIGURE 22-10

	5281	5340
GenBank L nucl.	ATGGATATGGAAGTTCGGGATTCTTCTACTAGCCTGAAAATTGAGACGAATGTTAGAAAT	
HR L nucl.	ATGGATATGGAAGTTCGGGATTCTTCTACTAGCCTGAAAATTGAGACGAATGTTAGAAAT	
M2 L nucl.	.....
M4 L nucl.	ATGGATATGGAAGTTCGGGATTCTTCTACTAGCCTGAAAATTGAGACGAATGTTAGAAAT	
	5341	5400
GenBank L nucl.	TATGTGCACCGGATTTTGGATGAGCAAGGAGTTTAAATCTACAAGACTTATGGAACATAT	
HR L nucl.	TATGTGCACCGGATTTTGGATGAGCAAGGAGTTTAAATCTACAAGACTTATGGAACATAT	
M2 L nucl.	.....
M4 L nucl.	TATGTGCACCGGATTTTGGATGAGCAAGGAGTTTAAATCTACAAGACTTATGGAACATAT	
	5401	5460
GenBank L nucl.	ATTTGTGAGAGCGAAAAGAATGCAGTAACAATCCTTGGTCCCATGTTCAAGACGGTCGAC	
HR L nucl.	ATTTGTGAGAGCGAAAAGAATGCAGTAACAATCCTTGGTCCCATGTTCAAGACGGTCGAC	
M2 L nucl.	.....
M4 L nucl.	ATTTGTGAGAGCGAAAAGAATGCAGTAACAATCCTTGGTCCCATGTTCAAGACGGTCGAC	
	5461	5520
GenBank L nucl.	TTAGTTCAAACAGAATTTAGTAGTTCTCAAACGCTCTGAAGTATATATGGTATGTAAAGGT	
HR L nucl.	TTAGTTCAAACAGAATTTAGTAGTTCTCAAACGCTCTGAAGTATATATGGTATGTAAAGGT	
M2 L nucl.	.....
M4 L nucl.	TTAGTTCAAACAGAATTTAGTAGTTCTCAAACGCTCTGAAGTATATATGGTATGTAAAGGT	
	5521	5580
GenBank L nucl.	TTGAAGAAATTAATCGATGAACCCAATCCCGATTGGTCTTCCATCAATGAATCCTGGAAA	
HR L nucl.	TTGAAGAAATTAATCGATGAACCCAATCCCGATTGGTCTTCCATCAATGAATCCTGGAAA	
M2 L nucl.	.....
M4 L nucl.	TTGAAGAAATTAATCGATGAACCCAATCCCGATTGGTCTTCCATCAATGAATCCTGGAAA	
	5581	5640
GenBank L nucl.	AACCTGTACGATTCCAGTCATCAGAACAGGAATTTGCCAGAGCAAAGAAGGTTAGTACA	
HR L nucl.	AACCTGTACGATTCCAGTCATCAGAACAGGAATTTGCCAGAGCAAAGAAGGTTAGTACA	
M2 L nucl.	.....
M4 L nucl.	AACCTGTACGATTCCAGTCATCAGAACAGGAATTTGCCAGAGCAAAGAAGGTTAGTACA	
	5641	5700
GenBank L nucl.	TACTTTACCTTGACAGGTATTCCCTCCCAATTCATTCTCTGATCCTTTTGTGAACATTGAG	
HR L nucl.	TACTTTACCTTGACAGGTATTCCCTCCCAATTCATTCTCTGATCCTTTTGTGAACATTGAG	
M2 L nucl.	.....
M4 L nucl.	TACTTTACCTTGACAGGTATTCCCTCCCAATTCATTCTCTGATCCTTTTGTGAACATTGAG	
	5701	5760
GenBank L nucl.	ACTATGCTACAAATATTTCGGAGTACCCACGGGTGTGTCTCATGCGGCTGCCTTAAATCA	
HR L nucl.	ACTATGCTACAAATATTTCGGAGTACCCACGGGTGTGTCTCATGCGGCTGCCTTAAATCA	
M2 L nucl.	.....
M4 L nucl.	ACTATGCTACAAATATTTCGGAGTACCCACGGGTGTGTCTCATGCGGCTGCCTTAAATCA	
	5761	5820
GenBank L nucl.	TCTGATAGACCTGCAGATTTATTGACCATTAGCCTTTTTTATATGGCGATTATATCGTAT	
HR L nucl.	TCTGATAGACCTGCAGATTTATTGACCATTAGCCTTTTTTATATGGCGATTATATCGTAT	
M2 L nucl.	.....
M4 L nucl.	TCTGATAGACCTGCAGATTTATTGACCATTAGCCTTTTTTATATGGCGATTATATCGTAT	

FIGURE 22-11

GenBank L nucl.	5821	5880
HR L nucl.	TATAACATCAATCATATCAGAGTAGGACCGATACCTCCGAACCCCCCATCAGATGGAATT	TATAACATCAATCATATCAGAGTAGGACCGATACCTCCGAACCCCCCATCAGATGGAATT
M2 L nucl.	.....	.....
M4 L nucl.	TATAACATCAATCATATCAGAGTAGGACCGATACCTCCGAACCCCCCATCAGATGGAATT	TATAACATCAATCATATCAGAGTAGGACCGATACCTCCGAACCCCCCATCAGATGGAATT
GenBank L nucl.	5881	5940
HR L nucl.	GCACAAAATGTGGGGATCGCTATAACTGGTATAAGCTTTTGGCTGAGTTTGATGGAGAAA	GCACAAAATGTGGGGATCGCTATAACTGGTATAAGCTTTTGGCTGAGTTTGATGGAGAAA
M2 L nucl.	.....	.....
M4 L nucl.	GCACAAAATGTGGGGATCGCTATAACTGGTATAAGCTTTTGGCTGAGTTTGATGGAGAAA	GCACAAAATGTGGGGATCGCTATAACTGGTATAAGCTTTTGGCTGAGTTTGATGGAGAAA
GenBank L nucl.	5941	6000
HR L nucl.	GACATTCCACTATATCAACAGTGTTTAGCAGTTATCCAGCAATCATTCCTCGATTAGGTGG	GACATTCCACTATATCAACAGTGTTTAGCAGTTATCCAGCAATCATTCCTCGATTAGGTGG
M2 L nucl.	.....	.....
M4 L nucl.	GACATTCCACTATATCAACAGTGTTTAGCAGTTATCCAGCAATCATTCCTCGATTAGGTGG	GACATTCCACTATATCAACAGTGTTTAGCAGTTATCCAGCAATCATTCCTCGATTAGGTGG
GenBank L nucl.	6001	6060
HR L nucl.	GAGGCTGTTTCAGTAAAAGGAGGATACAAGCAGAAGTGGAGTACTAGAGGTGATGGGCTC	GAGGCTGTTTCAGTAAAAGGAGGATACAAGCAGAAGTGGAGTACTAGAGGTGATGGGCTC
M2 L nucl.	.....	.....
M4 L nucl.	GAGGCTGTTTCAGTAAAAGGAGGATACAAGCAGAAGTGGAGTACTAGAGGTGATGGGCTC	GAGGCTGTTTCAGTAAAAGGAGGATACAAGCAGAAGTGGAGTACTAGAGGTGATGGGCTC
GenBank L nucl.	6061	6120
HR L nucl.	CCAAAAGATACCCGAATTTCAGACTCCTTGGCCCCAATCGGGAACCTGGATCAGATCTCTG	CCAAAAGATACCCGAATTTCAGACTCCTTGGCCCCAATCGGGAACCTGGATCAGATCTCTG
M2 L nucl.	.....	.....
M4 L nucl.	CCAAAAGATACCCGAATTTCAGACTCCTTGGCCCCAATCGGGAACCTGGATCAGATCTCTG	CCAAAAGATACCCGAATTTCAGACTCCTTGGCCCCAATCGGGAACCTGGATCAGATCTCTG
GenBank L nucl.	6121	6180
HR L nucl.	GAATTGGTCCGAAACCAAGTTTCGTCTAAATCCATTCAATGAGATCTTGTTCATCAGCTA	GAATTGGTCCGAAACCAAGTTTCGTCTAAATCCATTCAATGAGATCTTGTTCATCAGCTA
M2 L nucl.	.....	.....
M4 L nucl.	GAATTGGTCCGAAACCAAGTTTCGTCTAAATCCATTCAATGAGATCTTGTTCATCAGCTA	GAATTGGTCCGAAACCAAGTTTCGTCTAAATCCATTCAATGAGATCTTGTTCATCAGCTA
GenBank L nucl.	6181	6240
HR L nucl.	TGTCGTACAGTGGATAATCATTTGAAATGGTCAAATTTGCGAAACAAACACAGGAATGATT	TGTCGTACAGTGGATAATCATTTGAAATGGTCAAATTTGCGAAAAACACAGGAATGATT
M2 L nucl.	.....	.....
M4 L nucl.	TGTCGTACAGTGGATAATCATTTGAAATGGTCAAATTTGCGAAAAACACAGGAATGATT	TGTCGTACAGTGGATAATCATTTGAAATGGTCAAATTTGCGAAAAACACAGGAATGATT
GenBank L nucl.	6241	6300
HR L nucl.	GAATGGATCAATAGACGAATTTCAAAGAAGACCGGTCTATACTGATGTTGAAGAGTGAC	GAATGGATCAATAGACGAATTTCAAAGAAGACCGGTCTATACTGATGTTGAAGAGTGAC
M2 L nucl.	.....	.....
M4 L nucl.	GAATGGATCAATAGACGAATTTCAAAGAAGACCGGTCTATACTGATGTTGAAGAGTGAC	GAATGGATCAATAGACGAATTTCAAAGAAGACCGGTCTATACTGATGTTGAAGAGTGAC

FIGURE 22-12

	6301	6360
GenBank L nucl.	CTACACGAGGAAAACCTCTGGAGAGATTAA.....	
HR L nucl.	CTACATGAGGAAAACCTCTGGAGAGATTAAAAATCATGAGGAGACTCCAACTTTAAGT	
M2 L nucl.	.....
M4 L nucl.	CTACATGAGGAAAACCTCTGGAGAGATTAA.....	
	6361	6395
GenBank L nucl.	.....
HR L nucl.	ATGAAAAAACTTTGATCCTTAAGACCCTCTTGTG	
M2 L nucl.	.....
M4 L nucl.	.....

FIGURE 22-13

00560-11115900

		1	60
GenBank L	a.a.	MEVHDFETDEFNDFNEDDYATREFLNPD	RMRTYLNHADYNLNSPLISDDIDNLRKFNSL
HR L a.a.		MEVHDFETDEFNDFNEDDYATREFLNPD	RMRTYLNHADYNLNSPLISDDIDNLRKFNSL
M4 L a.a.		MEVHDFETDEFNDFNEDDYATREFLNPD	RMRTYLNHADYNLNSPLISDDIDNLRKFNSL
GenBank L	a.a.	61	120
HR L a.a.		PIPSMWDSKNWDGVLEMLTSCQANPISTSQMHKWMG	SWLMSDNHDASQGYSLHEVDKEA
M4 L a.a.		PIPSMWDSKNWDGVLEMLTSCQANPISTSQMHKWMG	SWLMSDNHDASQGYSLHEVDKEA
GenBank L	a.a.	121	180
HR L a.a.		EITFDVVETFIRGWGNKPIEYIKKERWTD	DFKILAYLCQKFLDLHKLTILNAVSEVELL
M4 L a.a.		EITFDVVETFIRGWGNKPIEYIKKERWTD	DFKILAYLCQKFLDLHKLTILNAVSEVELL
GenBank L	a.a.	181	240
HR L a.a.		NLARTFKGKVRSSSHGTNCRIRVPSL	GPTFISEGWAYFKKLDILMDRNFLLMVKDVIIG
M4 L a.a.		NLARTFKGKVRSSSHGTNCRIRVPSL	GPTFISEGWAYFKKLDILMDRNFLLMVKDVIIG
GenBank L	a.a.	241	300
HR L a.a.		RMQTVLSMVCRIDNLFSEQDIFSL	LLNIYRIGDKIVERQGNFSYDLIKMVEPICNLRKLMKL
M4 L a.a.		RMQTVLSMVCRIDNLFSEQDIFSL	LLNIYRIGDKIVERQGNFSYDLIKMVEPICNLRKLMKL
GenBank L	a.a.	301	360
HR L a.a.		ARESRLVPQPPHFENHIKTSVDEGA	KIDRGIRFLHDQIMSVKTVDLTLVIYGSFRHWGH
M4 L a.a.		ARESRLVPQPPHFENHIKTSVDEGA	KIDRGIRFLHDQIMSVKTVDLTLVIYGSFRHWGH
GenBank L	a.a.	361	420
HR L a.a.		PFIDYYIGLEKLHSQVTMKKIDIVSYAKALASDL	ARIVLFQQFNDHKKWFVNGDLLPHDH
M4_L.pro		PFIDYYAGLEKLHSQVTMKKIDIVSYAKALASDL	ARIVLFQQFNDHKKWFVNGDLLPHDH
GenBank L	a.a.	421	480
HR L a.a.		PFKSHVKENTWPTAAQVQDFGDKWHELPLIKCFE	IPDLLDPSIIYSKSHSMNRSEVLKH
M4 L a.a.		PFKSHVKENTWPTAAQVQDFGDKWHELPLIKCFE	IPDLLDPSIIYSKSHSMNRSEVLKH
GenBank L	a.a.	481	540
HR L a.a.		VRMNPNTPIPSKKVLQTMLDTKATNWKEFLKEI	DEKGLDDDDLIIGLKGERELKLAGRF
M4 L a.a.		VRMNPNTPIPSKKVLQTMLDTKATNWKEFLKEI	DEKGLDDDDLIIGLKGERELKLAGRF
GenBank L	a.a.	541	600
HR L a.a.		FSLMSWKLREYFVITEYLIKTHFVPMFKGLT	TMADDLTAVIKKMLDSSSGQGLKSYEAICI
M4 L a.a.		FSLMSWKLREYFVITEYLIKTHFVPMFKGLT	TMADDLTAVIKKMLDSSSGQGLKSYEAICI

FIGURE 23-1

GenBank L	a.a.	1201	LSNIHSLTGEWTKRQHGFKRTGSALHRFSTSRMSHGGFASQSTAALTRLMATTDTRDL	1260
HR L	a.a.		LSNIHSLTGEWTKRQHGFKRTGSALHRFSTSRMSHGGFASQSTAALTRLMATTDTRDL	
M4 L	a.a.		LSNIHSLTGEWTKRQHGFKRTGSALHRFSTSRMSHGGFASQSTAALTRLMATTDTRDL	
GenBank L	a.a.	1261	GDQNFDFLFQATLLYAQITTTVARDGWITSCTDHYHIACKSCLRPIEEITLDSSMDYTPP	1320
HR L	a.a.		GDQNFDFLFQATLLYAQITTTVARDGWITSCTDHYHIACKSCLRPIEEITLDSSMDYTPP	
M4 L	a.a.		GDQNFDFLFQATLLYAQITTTVARDGWITSCTDHYHIACKSCLRPIEEITLDSSMDYTPP	
GenBank L	a.a.	1321	DVSHVLKTRWNGEGSWGQEIQIYPLEGNWKNLAPAEQSYQVGRICIGFLYGDLAYRKSTH	1380
HR L	a.a.		DVSHVLKTRWNGEGSWGQEIQIYPLEGNWKNLAPAEQSYQVGRICIGFLYGDLAYRKSTH	
M4 L	a.a.		DVSHVLKTRWNGEGSWGQEIQIYPLEGNWKNLAPAEQSYQVGRICIGFLYGDLAYRKSTH	
GenBank L	a.a.	1381	AEDSSLFPLSIQGRIRGRGFLKGLLDGLMRASCCQVIHRRSLAHLKR PANAVYGGIYLI	1440
HR L	a.a.		AEDSSLFPLSIQGRIRGRGFLKGLLDGLMRASCCQVIHRRSLAHLKR PANAVYGGIYLI	
M4 L	a.a.		AEDSSLFPLSIQGRIRGRGFLKGLLDGLMRASCCQVIHRRSLAHLKR PANAVYGGIYLI	
GenBank L	a.a.	1441	DKLSVSPFPLSLTRSGPIRDELETIPHKIPTSYPTSNRDMGVIVRNYFKYQCRLIEKGKY	1500
HR L	a.a.		DKLSVSPFPLSLTRSGPIRDELETIPHKIPTSYPTSNRDMGVIVRNYFKYQCRLIEKGKY	
M4 L	a.a.		DKLSVSPFPLSLTRSGPIRDELETIPHKIPTSYPTSNRDMGVIVRNYFKYQCRLIEKGKY	
GenBank L	a.a.	1501	RSHYSQLWLFSDVLSIDFIGPFSISTLLQILYKPFSLGKDKNELRELANLSSLLRSSEG	1560
HR L	a.a.		RSHYSQLWLFSDVLSIDFIGPFSISTLLQILYKPFSLGKDKNELRELANLSSLLRSSEG	
M4 L	a.a.		RSHYSQLWLFSDVLSIDFIGPFSISTLLQILYKPFSLGKDKNELRELANLSSLLRSSEG	
GenBank L	a.a.	1561	WEDIHVKFFTKDILLCP EIRHACKFGIAKDNNKMSYPPWGRESRGTTITIPVYYTTTP	1620
HR L	a.a.		WEDIHVKFFTKDILLCP EIRHACKFGIAKDNNKMSYPPWGRESRGTTITIPVYYTTTP	
M4 L	a.a.		WEDIHVKFFTKDILLCP EIRHACKFGIAKDNNKMSYPPWGRESRGTTITIPVYYTTTP	
GenBank L	a.a.	1621	YPKMLEMPRIQNPLLSGIRLGQLPTGAHYKIRSILHGMGIHYRDFLSCGDGSGGMTAAL	1680
HR L	a.a.		YPKMLEMPRIQNPLLSGIRLGQLPTGAHYKIRSILHGMGIHYRDFLSCGDGSGGMTAAL	
M4 L	a.a.		YPKMLEMPRIQNPLLSGIRLGQLPTGAHYKIRSILHGMGIHYRDFLSCGDGSGGMTAAL	
GenBank L	a.a.	1681	LRENVHSRGIFNSLLELSGSVMRGASPEPPSALETGGDKSRCVNGETCWEYPSDLC DPR	1740
HR L	a.a.		LRENVHSRGIFNSLLELSGSVMRGASPEPPSALETGGDKSRCVNGETCWEYPSDLC DPR	
M4 L	a.a.		LRENVHSRGIFNSLLELSGSVMRGASPEPPSALETGGDKSRCVNGETCWEYPSDLC DPR	
GenBank L	a.a.	1741	TWDYFLRLKAGLGLQIDLIVMDMEVRDSSTSLKIETNVRNYVHRILDEQGVLIYKTYGTY	1800
HR L	a.a.		TWDYFLRLKAGLGLQIDLIVMDMEVRDSSTSLKIETNVRNYVHRILDEQGVLIYKTYGTY	
M4 L	a.a.		TWDYFLRLKAGLGLQIDLIVMDMEVRDSSTSLKIETNVRNYVHRILDEQGVLIYKTYGTY	
GenBank L	a.a.	1801	ICESEKNAVITILGPMFKTVDLVQTEFSSSQTSEVYMVCKGLKKLIDEPNPDWSSINESWK	1860
HR L	a.a.		ICESEKNAVITILGPMFKTVDLVQTEFSSSQTSEVYMVCKGLKKLIDEPNPDWSSINESWK	
M4 L	a.a.		ICESEKNAVITILGPMFKTVDLVQTEFSSSQTSEVYMVCKGLKKLIDEPNPDWSSINESWK	

FIGURE 23-3

Accession	Year	Strain	GenBank L	a.a.	HR L a.a.	M4 L a.a.	Sequence
1861	1920		GenBank L	a.a.	HR L a.a.	M4 L a.a.	NLYAFQSSEQEFARAKKVSTYFTLTGIPSQFIPDPFVNIETMLQIFGVPTGVSHAAALKS NLYAFQSSEQEFARAKKVSTYFTLTGIPSQFIPDPFVNIETMLQIFGVPTGVSHAAALKS NLYAFQSSEQEFARAKKVSTYFTLTGIPSQFIPDPFVNIETMLQIFGVPTGVSHAAALKS
1921	1980		GenBank L	a.a.	HR L a.a.	M4 L a.a.	SDRPADLLTISLFYMAIISYYNINHIRVGPIPPNPPSDGIAQNVGIAITGISFWLSLMEK SDRPADLLTISLFYMAIISYYNINHIRVGPIPPNPPSDGIAQNVGIAITGISFWLSLMEK SDRPADLLTISLFYMAIISYYNINHIRVGPIPPNPPSDGIAQNVGIAITGISFWLSLMEK
1981	2040		GenBank L	a.a.	HR L a.a.	M4 L a.a.	DIPLYQQCLAVIQQSFPPIRWEAVSVKGGYKQKWSTRGDGLPKDTRISDSLAPIGNWIRSL DIPLYQQCLAVIQQSFPPIRWEAVSVKGGYKQKWSTRGDGLPKDTRISDSLAPIGNWIRSL DIPLYQQCLAVIQQSFPPIRWEAVSVKGGYKQKWSTRGDGLPKDTRISDSLAPIGNWIRSL
2041	2100		GenBank L	a.a.	HR L a.a.	M4 L a.a.	ELVRNQVRLNPFNEILFNQLCRTVDNHLKWSNLRKNTGMIEWINRRISKEDRSILMLKSD ELVRNQVRLNPFNEILFNQLCRTVDNHLKWSNLRKNTGMIEWINRRISKEDRSILMLKSD ELVRNQVRLNPFNEILFNQLCRTVDNHLKWSNLRKNTGMIEWINRRISKEDRSILMLKSD
2101	2110		GenBank L	a.a.	HR L a.a.	M4 L a.a.	LHEENSWRD LHEENSWRD LHEENSWRD

FIGURE 23-4